VSB – TECHNICAL UNIVERSITY OF OSTRAVA
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Zhodnocení finační situace společnosti MACY'S
Financial Situation Evaluation of MACY'S Company

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1. Introduction
2. Description of Financial Analysis Methodology
3. Characteristics of MACY'S Company
4. Financial Situation Evaluation of MACY'S Company
5. Conclusion

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Declaration of Utilisation of Results from the Bachelor Thesis
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"I hereby declare that I have elaborated the entire thesis including annexes myself."

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Contents

1. Introduction

This thesis is focused on the financial analysis of the biggest department store in America, Macy's. It's a company with a long history from the year 1858.

The aim of this thesis is to analyze the financial situation and the development from 2013 to 2017 of Macy's. The financial information of a company is significant for both the company and the investors in the market. From the company's point of view, knowing the financial assets and earnings help them to understand their market status. From the investors' side, the common size information and the financial ratios help them to decide which companies deserve their money. And the thesis has five parts to introduce and analyze the financial situation of Macy's.

The first chapter tells the structure of the thesis, with which the readers are able to clearly know the orders of introduction.

And the second chapter is based on the methodology which will be applied in the analysis. We have common size analysis, financial ratios, pyramidal decomposition and the sensitivity analysis. These are all fundamental and significant methods. By applying them we're able to know the company basically.

In the third chapter, the overview of Macy's is available. There will the company's history, the characteristics of the operating and Macy's social responsibilities be explained. We will get to know the development model of the company, as well as its innovations and the company's cultures.

The forth chapter is the main part to analyze the company's financial situation, the market profitability performances of Macy's, as well as the significant variables which influence the company's performances the most. And here the methods introduced in the chapter two will all be applied to conduct the analysis.

With common size analysis, we are able to know the market status of the company. With financial ratios, we can know the performances of the company. And with pyramidal decomposition, we can know how the variables drive our target ratios and we can also know which factors influence the company the most. What's more, the sensitivity analysis provides how the target ratios react to the changes of the input variables. Thus we can decide whether the target ratios will increase or decrease if we increase or decrease one input variables.

Finally we will draw the conclusions in the fifth chapter. After the knowing of the company's financial situation and the analysis of its financial indicators, we are able to predict its future development and judge whether it's reasonable to buy and hold on the bonds and shares of Macy's.

2. Description of Financial Analysis Methodology

In this chapter, there will be methods which are used to calculate the financial ratios that have been explained in chapter four, including liquidity ratios, solvency ratios and profitability ratios. Moreover, the methods for sensitivity analysis will also be explained. With all the methods and formulas below, the analysis results will be relatively believable.

2.1. Horizontal and Vertical Methods

Usually we know the company's development situation and previous performance by the horizontal and vertical methods, both of which are common-size analysis. Firstly, horizontal analysis is the method to know the evolution of a company's financial statement data over a period of time. And vertical analysis is the way to know the changes in each proportion of the selected benchmarks.

2.2. Formulas for Financial Ratios

Generally, we analyze the liquidity ratios, solvency ratios, profitability ratios as well as the assets management ratios of a company to understand its financial situation.

2.2.1. Formulas for Liquidity Ratios

Firstly, I will focus on the liquidity ratios. Liquidity ratios measure the company's ability to meet its short-term obligations by comparing the company's liquid assets and liquid liabilities. And the followings are some basic ratios.

$$\text{Current ratio} = \frac{current\ assets}{current\ liabilities} \tag{2.1}$$

Current ratio measures how many current liabilities can be met by one unit of current assets. And next quick ratio will be introduced.

$$\text{Quick ratio} = \frac{current\ assets - inventories}{current\ liabilities} \left(\text{or } \frac{cash + accounts\ receivable}{current\ liabilities}\right) \tag{2.2}$$

Quick ratio uses more liquid assets to measure the current liabilities. Inventories can only

be used after being sold, thus this method is more realistic. The next one is cash ratio.

$$\text{Cash ratio}=\frac{cash+marketable\ securities}{current\ liabilities} \tag{2.3}$$

Cash ratio works with the assets which are in form of cash. And the last liquidity ratio is basic defense ratio. It measures how many days a company can survive without touching its non-liquid assets or external financial resources.

$$\text{Basic defense ratio}=\frac{cash+accounts\ receivable}{operating\ costs+interest\ paid+tax} \tag{2.4}$$

2.2.2. Formulas for Solvency Ratios

Then come to the solvency ratios, which are similar to liquidity ratios. The difference is that solvency ratios measure the company's ability to meet its long-term obligations. And here are three basic ratios.

$$\text{Debt ratio}=\frac{total\ liabilities}{total\ assets} \tag{2.5}$$

Debt ratio tells how many assets of the company are financed by debts. And then is debt-to-equity ratio. It is similar to debt ratio. Debt-to-equity ratio tells the relation between debts and equity.

$$\text{Debt-to-equity ratio}=\frac{total\ liabilities}{equity} \tag{2.6}$$

And the last formula that was used for solvency ratios is interest coverage. It tells us how many operating profits are used to meet the company's interest paid.

$$\text{Interest coverage}=\frac{EBIT(operatin\ profit)}{interest\ paid} \tag{2.7}$$

2.2.3. Formulas for Profitability Ratios

Next are the profitability ratios which measure the company's ability to generate profit

from the invested capital during a certain period. Firstly, let's see operating profit margin. It measures how much profit the company generates from one unit of sales.

$$\text{OPM}=\frac{EBIT(operating\ profit)}{Revenues} \tag{2.8}$$

And then is net profit margin. It's the ratio of net profits to the company's sales, which tells us how much of each unit of sales becomes the company's profits.

$$\text{NPM}=\frac{EAT}{Revenues} \tag{2.9}$$

Finally we move to return on assets and return on equity. They tell us the percentage of the profits we derived from every unit of the company's assets and equity.

$$\text{ROA}=\frac{EBIT(operating\ profit)}{asses} \tag{2.10}$$

$$\text{ROE}=\frac{EAT}{equity} \tag{2.11}$$

2.2.4. Formulas for Assets Management Ratios

At last, our analysis comes to the assets management ratios, which are also called activity ratios. They measure how efficiently the company uses its capital. And the utilization efficiency will turn to directly influence the company's liquidity. At first, there is a basic activity ratio, average collection period.

$$\text{ACP}=\frac{Accounts\ receivable}{Revenues}\cdot 360 \tag{2.12}$$

Average collection period measures how long the company takes to convert the accounts receivable into cash. And then we have accounts receivable turnover, which measures how many times a company collects its average accounts receivable during one year.

$$\text{ART}=\frac{Revenues}{Accounts\ receivable} \tag{2.13}$$

And next come to inventory turnover and total assets turnover. Among these, inventory turnover is the ratio measures the times inventory is sold or used during a year. And total assets turnover measures how successfully the company generates revenues from the total assets.

$$\text{IT}=\frac{selling\ costs}{average\ inventory} \tag{2.14}$$

$$\text{TAT}=\frac{Revenues}{Total\ assets} \tag{2.15}$$

$$\text{FAT}=\frac{Revenues}{Fixed\ assets} \tag{2.16}$$

2.3. Method for Pyramidal Decomposition

For the analysis of pyramidal decomposition, the method of gradual changes is chosen in this chapter. Method of gradual changes works with the absolute changes of component ratios, and after the calculating we get the absolute change in the target ratios caused by the component ratios. Method of gradual changes can be applied regardless of positive or negative values in component ratios and target ratios. However, the different orders in decomposition may lead to different results. Here the fundamental example of the pyramidal decomposition is explained. For instance, we analyze ROE and how its component ratios influence it.

$$\text{ROE}=\frac{EAT}{Equity}=\frac{EAT}{Revenues}\cdot\frac{Revenues}{Total\ assets}\cdot\frac{Total\ assets}{Equity} \tag{2.17}$$

And to get the results how the component ratios influence the target ratio, we use the formulas of gradual changes.

$$\Delta X_{a1}=\Delta a_1\cdot a_{2,0}\cdot a_{3,0} \tag{2.18}$$

$$\Delta X_{a2}=a_{1,1}\cdot\Delta a_2\cdot a_{3,0} \tag{2.19}$$

$$\Delta X_{a3}=a_{1,1}\cdot a_{2,1}\cdot\ \Delta a_3 \tag{2.20}$$

Symbols: a=component ratio, Δ a=absolute change in the component ratio, $\Delta X a_1$=absolute change in the target ratio caused by the change in the first component ratio.

2.4. Method for Sensitivity Analysis

Sensitivity analysis is generally used in financial models to find out how the target ratio is affected by the changes in another input variable. We are able to know the target ratio is more sensitive to which input variable. Moreover, the influences on the composition ratios are also available. In order to figure which component is more important in influencing a company's financial indicators, we need sensitivity analysis. It orders the component ratios according to their relevance to the target ratio.

3. Characteristics of MACY'S Company

Macy's, with its flagship store in Herald Square in New York City, was billed as "the world's largest store" when it opened on the seventh avenue in 1924. Macy's also has two national flagship stores in San Francisco and the state street in Chicago. Macy's is a famous American department store. It was acquired by the United Department Stores in 1994 and became a subsidiary of it. According to the fortune global 500 list which was released in 2008, Macy's was ranked the 437 out of 500.

3.1. History of MACY'S

During the time 1858 to 1991, Macy's was on its appearing and developing stage. In 1858, Mr. Rowland Hussey Macy opened a store on his own name--R. H. Macy & Co. at the intersection of 14th street and 6th avenue in Manhattan. He chose a red star as a symbol of his success, dating back to when he was a sailor. Roland died in 1877. And Macy & Co. was acquired by the Straus in 1983. In 1902, the flagship store of Macy's was moved to the intersection of 34th street, the Broadway Street and the 7th Avenue in midtown Manhattan in New York, and it has remained there till now. And the picture 3.1 is what the company looks like in New York.

Picture 3.1 Macy's in Midtown Manhattan in New York

Resource: http://www.macysinc.com/

And then it came to 1992, Macy's went bankrupt. As a typical declining industry, the department store industry can attract fewer and fewer customers, and the brick-and-mortar stores are closing down. In addition, the impact of the new online shopping purchase mode makes Macy's sales drop sharply. Being faced with this huge market crisis, Macy's did not implement the corresponding defensive improvement measures. Instead, many branches of the replication appeared in Florida, Houston and New Orleans. In 1994, Macy's was countered by its rival, Federated Department Stores, which Macy's had been eyeing for a takeover.

From 1995 to 2007, Macy's experienced its redevelopment. United Department Stores realized through investigation that Macy's brand prestige had been deeply rooted in the hearts of the people, and it was of great significance to regain the unified brand with its long-term development prospect, so it began to change some of its branches back to Macy's. The strategy proved popular and sales rose steadily. Later, it renamed more than 300 Macy's stores into Macy's.

And since 2008, Macy's has reformed and developed in a new model. In 2008, there were over 500 branches of Macy's. It made Macy's became the second department store in America. Meanwhile, United Department Stores went on with the advertisement battle strategy. TV marketing, telephone counseling as well as the logistics distribution (Macy's has its own logistics company, Macy's logistics, which guarantees fast, efficient and efficient delivery) had all become the advantages which help Macy's to survive in the global financial crisis in 2008. However, Macy's was also weakened. It currently operates under the Macy's and Bloomingdale's brands.

3.2. Marketing Strategy of MACY'S

Strauss determined through research that today's market is customer-oriented, and the difficulty faced by enterprises is not how to produce products, but how to sell them. To make Macy's a success. Strauss developed a range of marketing techniques. The method of salesmanship is the "low-pressure selling method", in which the salesman introduces the

benefits of a certain product for the benefit of the customer from the standpoint of the customer to arouse the customer's interest. Therefore, he required salesmen of Macy's to have 10 understandings of commodities. And they are background information of commodities, appearance of commodities, composition of commodities, manufacturing process, use, service and durability of commodities, protection and use of commodities, price, history and policies of type companies, and competitive commodities. Moreover he thought salesmen should be good at using different strategies for different customers. And Strauss thought marketing should also be good at exploring future customers. And they can use the following measures to have more customers, using all kinds of existing brochures, tracking the company to inquire about the guests, similar products market research, groups and friends of the introduction, the use of exhibition, observation and speculation.

Macy's successively launched the "gift to consumers law", "consumers competition award law", "gift points law", "new product field performance law", "product showroom", "fashion show" and other sales methods, which have effectively promoted the sales of various goods. In the operation, Strauss paid special attention to the image of Macy's. In order to establish a first-class image of the quality of Macy's products among customers, all kinds of products run by Strauss are branded with the trademark of Macy's. Customers can get a refund or change if they are not satisfied.

Macy's continues to innovate in customer service, and its marketing researchers found that their main customers are middle-income people, especially housewives of this kind. In view of these customers' characteristics, Macy's then took flexible and effective service measures. All Macy's exits are located in conspicuous and convenient locations. Macy's set up the very spacious parking lot customers can quickly find the store, parking smoothly into the store door. They also designed stores with new structures where customers could drive to the parking lot next to the floor they want to buy on. For waiters, Macy's also made special rules: customers can make their own decisions, they can choose goods freely, if they need waiters, they should be on call. For customers who enjoy choosing, waiters should not be aloof and impatient, they should be allowed to choose freely and heartily. For purchasing

precious goods such as gemstones, furs, even cameras, televisions, customers and waiters should patiently answer customers' inquiries and provide them with help so that they can buy satisfactorily.

3.3. Social Responsibilities of MACY'S

Macy's ensures that goods are socially responsible. Since 1995, Macy's has asked its private label suppliers to comply with its supplier and supplier code of conduct, which sets clear and strict standards and requirements for all suppliers doing business with Macy's private label business. The law requires compliance with standards for children, forced labor, wages and hours, and unsafe working conditions. All suppliers to Macy's are trained in Macy's principles, audit agreements and terms of employment. The social compliance team continuously communicates expectations, encourages strong internal compliance policies, and works with suppliers to continuously improve production facilities.

What's more, they have taken significant steps to reduce waste in their facilities and business processes. The followings are some instances. Macy's and Bloomingdale's have installed more than 1.8 million LED lights and light fixtures in stores across the country. LED bulbs use 70 percent less energy than conventional bulbs. In 2016, energy consumption savings were estimated at approximately 25.7 million KWH. And the picture 3.2 is how Macy's applied the LED lighting to save sources.

Picture 3.2 LED Lighting of Macy's

Resource: *http://www.macysinc.com/*

To reduce waste in the commodity supply chain, some best practices have been adopted, including standardizing carton sizes, incorporating recycled polyester fibers into woven clothing labels, and minimizing packaging materials. They also work with some of the major household merchandise brand partners to identify best practices and utilize new approaches to reduce waste and cut costs on product packaging. The following picture 3.3 shows how well the Macy's bags work to protect the environment.

Picture 3.3 Macy's Environment Friendly Bags

Resource: *http://www.macysinc.com/*

Macy's is committed to making life better by serving their customers, their colleagues, and their communities. Macy's believes in the power of clothing to give confidence. A gift for self-confidence, which is to shine in a job interview, or to feel equal to your peers, is priceless. Since 2013, Macy's has donated millions of dollars' worth of clothing, giving people a sense of confidence they should feel extraordinary.

More than 41 million people in the United States are affected by hunger, including 13 million children. It exists in every state, every county, and every community. That's why Macy's is working on hunger packs. Every year, Macy's provides year-round support to food banks. Since 1998, they have raised the equivalent of $43 million to help end hunger through their annual bag hunger campaign.

4. Financial Situation Evaluation of Macy's Company

The purpose of this chapter is to analyze the financial situation of Macy's mainly according to the financial statements. Therefore, charts and tables will also be mainly used to show the operating conditions of Macy's. These financial analyses include horizontal and vertical analysis, financial ratios, pyramidal decomposition and sensitivity analysis. Based on the selected analytical materials and methods, both the rigor and mathematics of the description in this chapter will be well guaranteed.

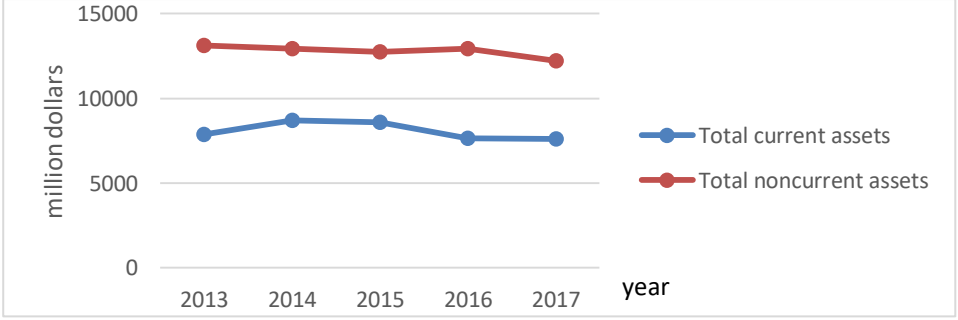
4.1. Horizontal and Vertical Analysis of Macy's

Horizontal and vertical analyses are fundamental methods in financial analysis, from which we are able to figure out the development of a company. Horizontal analysis provides us with the development trend of a company's assets, liabilities and so on. And vertical analysis provides us with the structures of each significant component in a company. The statistics of Macy's assets are as follows. (Table 4.1 and Figure 4.1)

Table 4.1 Evolution of Macy's Assets (unit: million dollars)

	2013	2014	2015	2016	2017
Current Assets	7876	8688	8580	7652	7626
Non-current Assets	13115	12946	12750	12924	12225
Total Assets	20991	21634	21330	20576	19851

Figure 4.1 Evolution of Macy's Assets

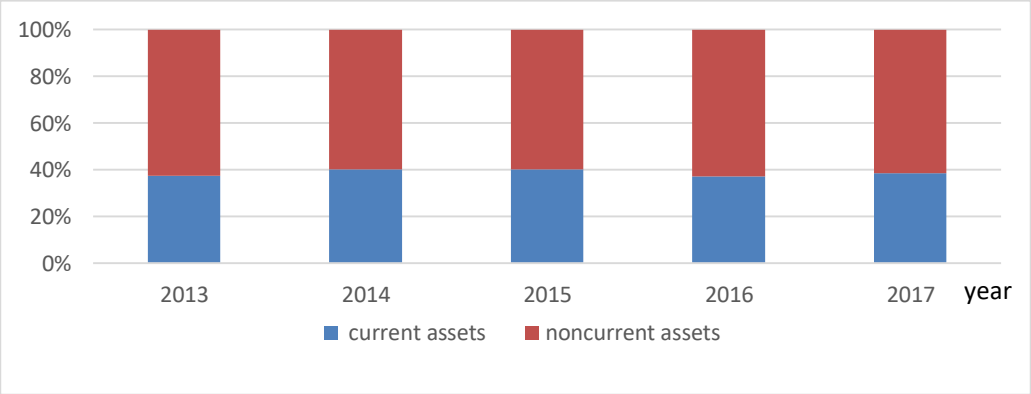


According to the figure, both the current and non-current assets decreased a little during the year 2013 to 2017, and the non-current assets are more stable than current assets. Generally the changes of assets are normal, for the company's further development costs money. And next are the structures of Macy's assets. (Table 4.2 and Figure 4.2)

Table 4.2 Structure of Macy's Assets (unit: %)

	2013	2014	2015	2016	2017
Proportion of Current Assets	37.52	40.16	40.23	37.19	38.42
Proportion of Non-current Assets	62.48	59.84	59.77	62.81	61.58

Figure 4.2 Structure of Macy's Assets

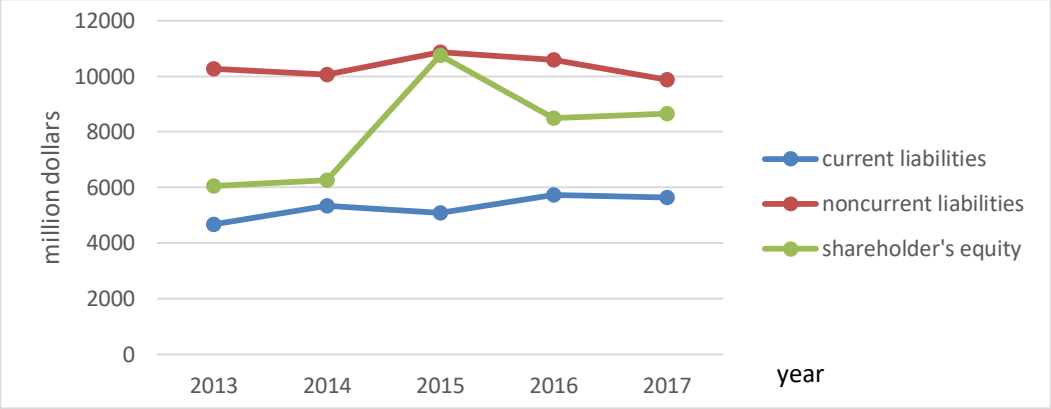


As the figure clearly shows, non-current assets are nearly twice as large as current assets. Current assets which include cash and accounts receivables are the main capital for a company's operating activities, investing plans and the realization of short obligations. Non-current assets which include buildings, equipment, patents and so on are much more difficult to be transferred into cash, compared with current assets. The current assets didn't fluctuate a lot, but it dropped in year 2016 and 2017, which means the decrease of liquidity and the increase of capital utilization efficiency. As long as the proportion of current assets is not too low, than that's fine with the company. The statistics of Macy's equity and liabilities' evolution are as following. (Table 4.3 and Figure 4.3)

Table 4.3 Evolution of Macy's Liabilities and Equity (unit: million dollars)

	2013	2014	2015	2016	2017
Current Liabilities	4668	5326	5075	5728	5647
Non-current Liabilities	10272	10059	10877	10595	9882
Shareholders' Equity	6051	6249	10756	8503	8645
Total Liabilities and Equity	20991	21634	26708	24826	24174

Figure 4.3 Evolution of Macy's Liabilities and Equity

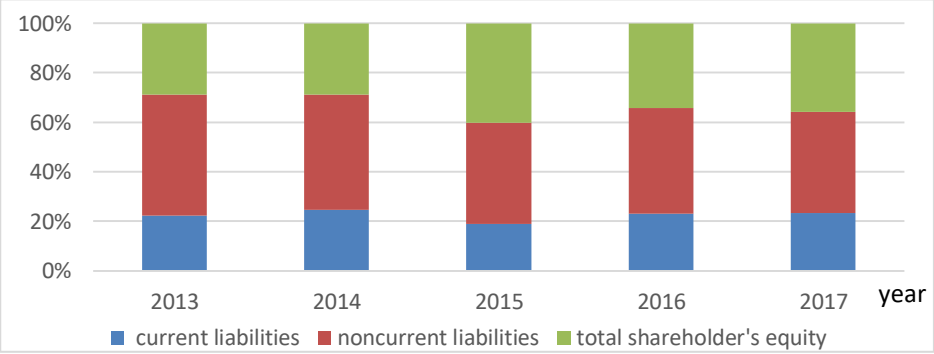


From the evolution figure, current and non-current liabilities of Macy's didn't fluctuate a lot during the last five years. Current liabilities mainly consist of short-term debts and accounts payable, while non-current liabilities are long-term debts. It shows the shareholder's equity experienced a huge increase in 2015 and then an obvious decrease in 2016. Generally the shareholder's equity is related to the company's dividend policy. Then come to the statistics of the structures of Macy's liabilities and equity. (Table 4.4 and Figure 4.4)

Table 4.4 Structure of Macy's Liabilities and Equity (unit: %)

	2013	2014	2015	2016	2017
Current Liabilities	22.24	24.62	19.00	23.07	23.36
Non-current Liabilities	48.94	46.50	40.73	42.68	40.88
Total Shareholder's Equity	28.83	28.89	40.27	34.25	35.76

Figure 4.4 Structure of Macy's Liabilities and Equity

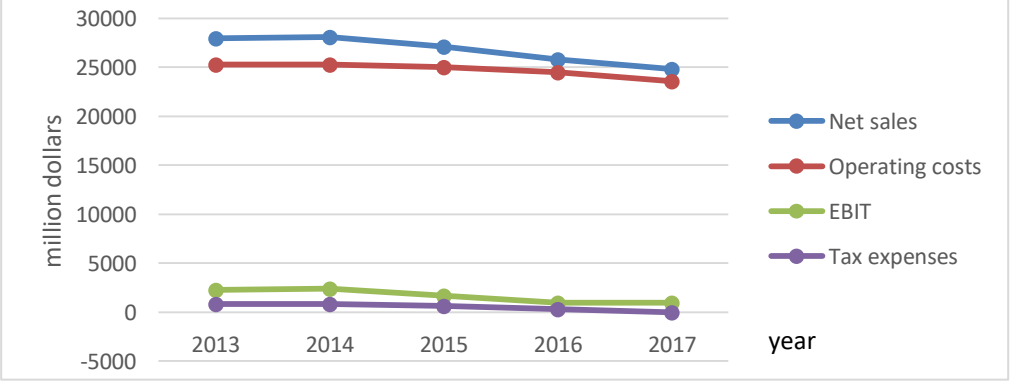


We conclude from the figure that non-current liabilities occupy the major part of Macy's liabilities and equity. Generally, only big companies with good reputation are able to gain the loans of big amount for their long-term uses. Next some statistics in Macy's income statement will be showed to analyze the evolution from 2013 to 2017. (Table 4.5 and Figure 4.5)

Table 4.5 Evolution of Macy's Income Statement (unit: million dollars)

	2013	2014	2015	2016	2017
Net Sales	27931	28105	27079	25778	24837
Operating Costs	25253	25278	25040	24463	23574
EBIT	2290	2417	1678	952	963
Tax Expenses	804	864	608	341	-29

Figure 4.5 Horizontal Analysis of Macy's Income Statement

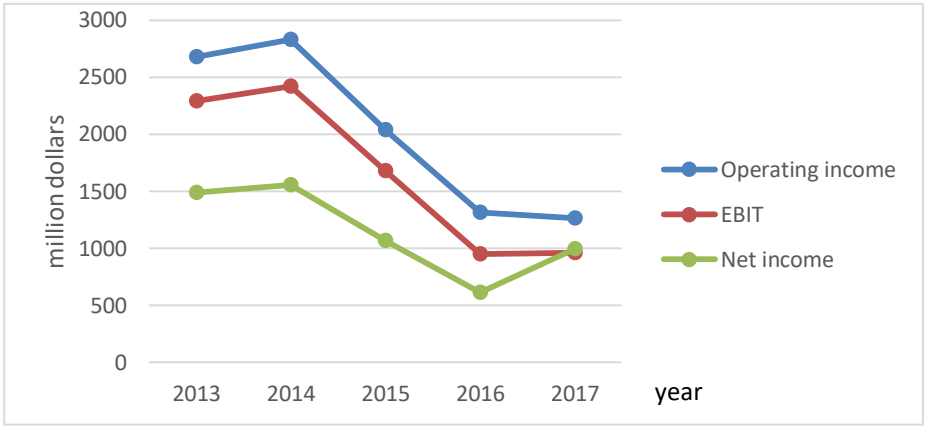


There are two negative trends in the figure, the net sales and the EBIT decreased during the year 2013 to 2017. The net sales are supposed to be Macy's major source of income. However, the net sales are falling, and fell seriously from the year 2014 to 2017, which is a real disadvantage. On the other hand, however, Macy's operating costs and tax expenses decreased recently, but they decreased less than net sales. And next come to the statistics of Macy's income from 2013 to 2017. (Table 4.6 and Figure 4.6)

Table 4.6 Evolution of Incomes (unit: million dollars)

	2013	2014	2015	2016	2017
Operating Income	2678	2827	2039	1315	1263
EBIT	2290	2417	1678	952	963
Net Income	1486	1553	1070	611	992

Figure 4.6 Evolution of Incomes of Macy's

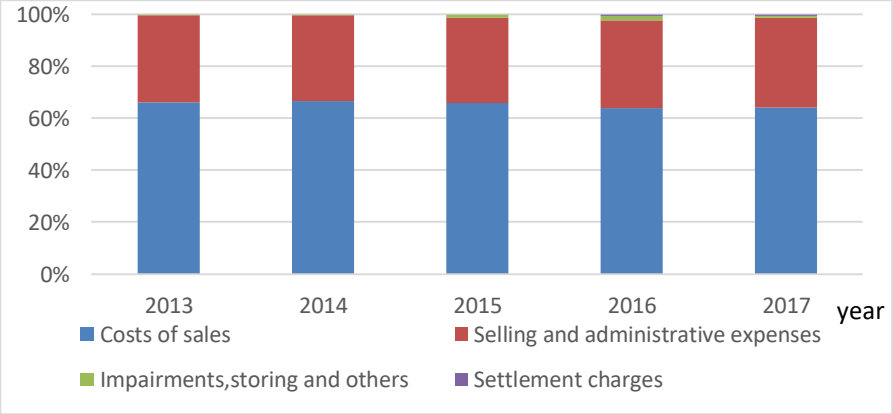


Unfortunately operating income, EBIT and net income are nearly always falling, which means the operating condition is not doing well. And the incomes decreased especially seriously from 2014 to 2016. They dropped nearly 30% each year. However, the net income suddenly increased about 100% from 2016 to 2017. It's obvious that incomes of Macy's are not stable. And the following are every proportion of Macy's operating costs. (Table 4.7 and Figure 4.7)

Table 4.7 Structure of Macy's Operating Costs (unit: %)

	2013	2014	2015	2016	2017
Costs of Sales	66.23	66.60	65.88	63.86	64.27
Selling and Administrative Expenses	33.42	33.05	32.97	33.79	34.49
Impairments, storing and Others	0.35	0.34	1.15	1.96	0.79
Settlement Charges	0.00	0.00	0.00	0.40	0.45

Figure 4.7 Structure of Macy's Operating Costs

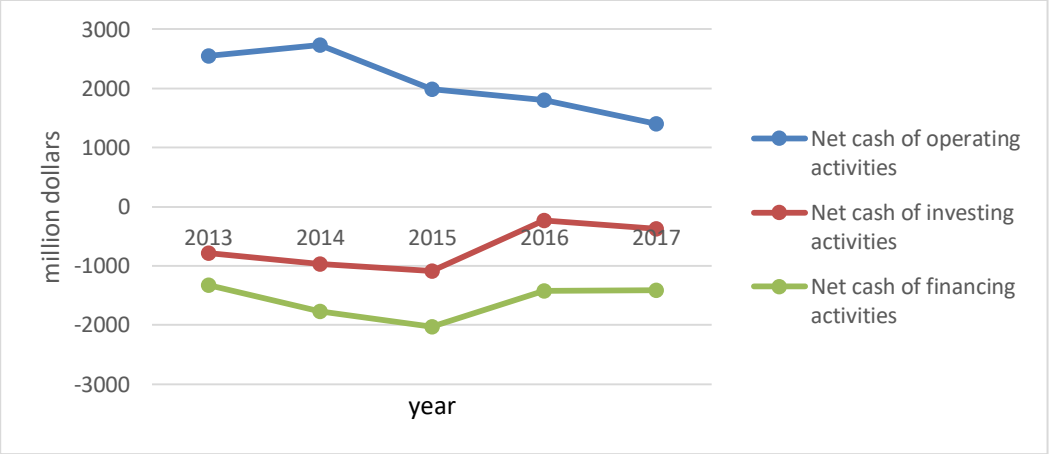


The structure of Macy's operating costs are rather easy, the company's general expenses mainly arise from selling goods and administrative activities. It's very common to get such a result, for Macy's is a department store. After that, we can see the statistics of Macy's cash flow evolution from 2013 to 2017. (Table 4.8 and Figure 4.8)

Table 4.8 Evolution of Macy's Cash Flow (unit: million dollars)

	2013	2014	2015	2016	2017
Net Cash of Operating Activities	2549	2763	1984	1801	1400
Net Cash of Investing Activities	-788	-970	-1092	-232	-373
Net Cash of Financing Activities	-1324	-1766	-2029	-1426	-1413

Figure 4.8 Evolution of Macy's Cash Flow

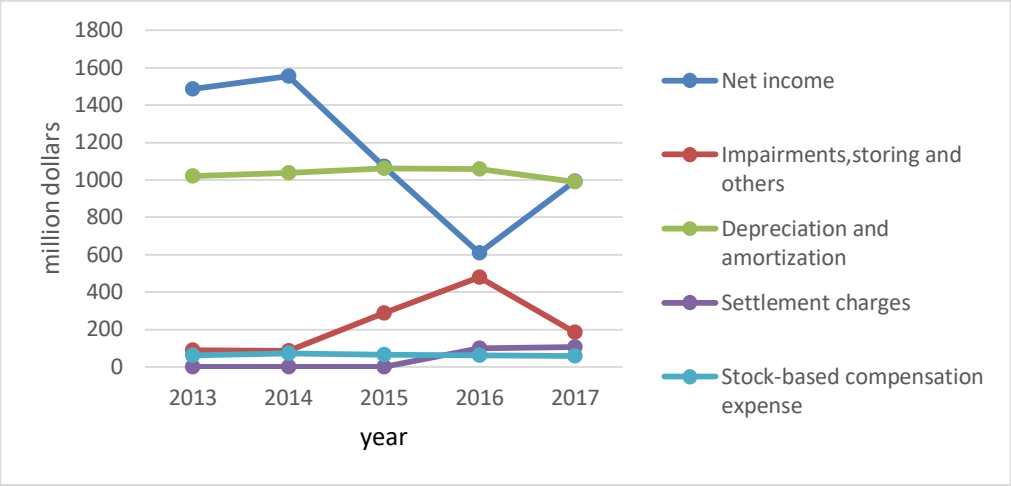


During 2013 to 2017, Macy's always have positive operating net cash flow and negative net cash flows from investing and financing activities. From 2013 to 2014, operating net cash slightly increased and then kept falling. And net cash flows of investing and financing activities are always falling, except the period 2015 to 2016. And now let's analyze the evolution of cash flow separately, first is the evolution of operating inflow. (Table 4.9 and Figure 4.9)

Table 4.9 Evolution of Macy's Operating Inflow (unit: million dollars)

	2013	2014	2015	2016	2017
Net Income	1486	1553	1070	611	992
Impairments, Storing and Others	88	87	288	479	186
Depreciation and Amortization	1020	1036	1061	1058	991
Settlement Charges	0	0	0	98	105
Stock-based Compensation Expense	62	73	65	61	58

Figure 4.9 Evolution of Macy's Operating Inflow

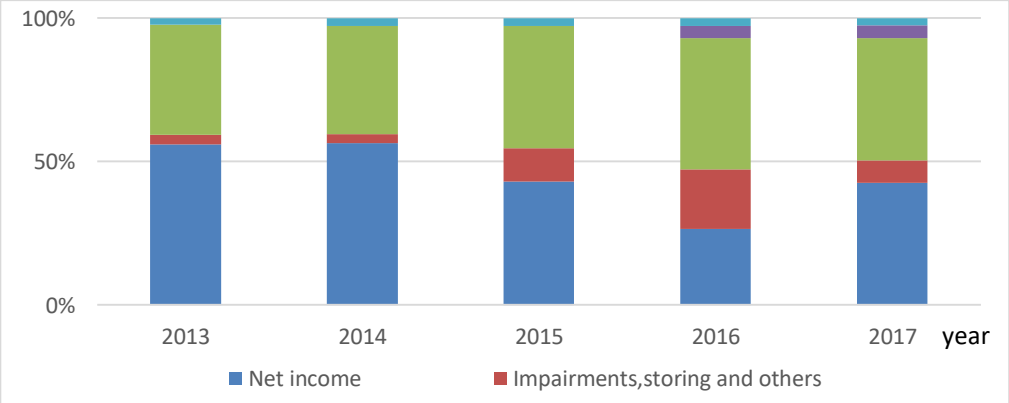


Firstly, we draw the conclusion that the company's operating inflow consists of many components. Then we can see that some of these components are not so important for they are small amounts. The main parts of operating inflow are net income and depreciation. And among them, the net income fluctuates seriously, while the depreciation is rather stable. Then are the statistics showing the structure of operating inflow. (Table 4.10 and Figure 4.10)

Table 4.10 Structure of Macy's Operating Inflow (unit: %)

	2013	2014	2015	2016	2017
Net Income	55.95	56.49	43.08	26.48	42.54
Impairments, storing and Others	3.31	3.16	11.59	20.76	7.98
Depreciation and Amortization	38.40	37.69	42.71	45.86	42.50
Settlement Charges	0.00	0.00	0.00	4.25	4.50
Stock-based Compensation Expense	2.33	2.66	2.62	2.64	2.49

Figure 4.10 Structure of Macy's Operating Inflow

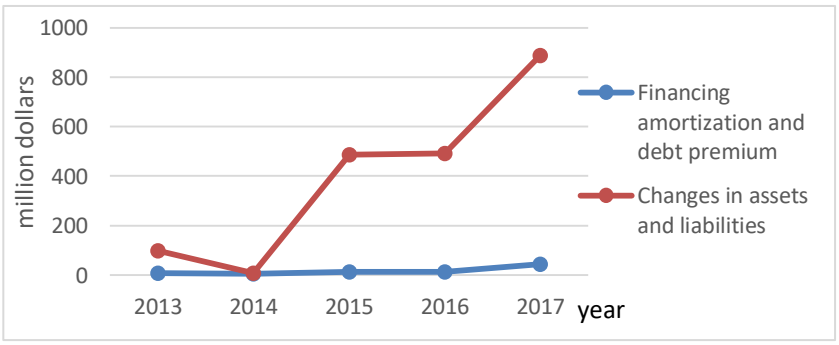


As we can see, net income, depreciation and impairments play the major roles in operating inflow. And from 2013 to 2014, the percentages of net income are more than 50% while the percentages of depreciation are over 35%. After 2015, the percentages of net income became relatively low and operating inflow relied more on other components like depreciation and impairments. Next is the situation of operating outflow flow. (Table 4.11 and Figure 4.11)

Table 4.11 Evolution of Macy's Operating Outflow (unit: million dollars)

	2013	2014	2015	2016	2017
Financing Amortization and Debt Premium	8	5	14	14	45
Changes in Assets and Liabilities	99	8	486	492	887

Figure 4.11 Evolution of Macy's Operating Outflow

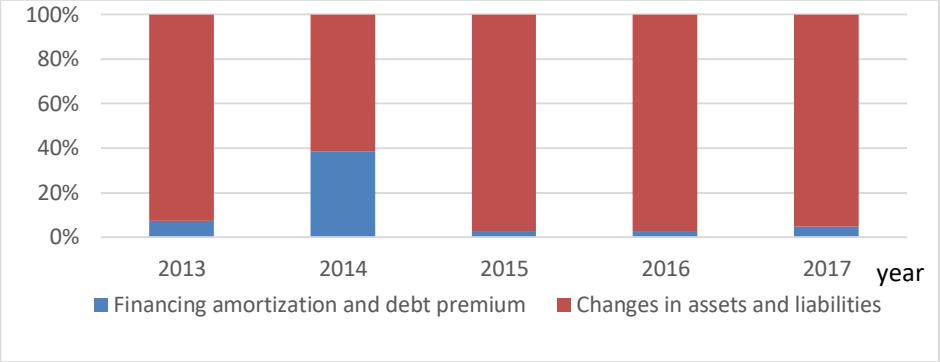


Macy's operating outflow consists of two parts, amortization and changes in assets and liabilities. Amortization didn't fluctuate a lot. But changes in assets and liabilities are quite not stable, basically, the changes are increasing and rather seriously. And the following statistics tell each component of Macy's operating outflow. (Table 4.12 and Figure 4.12)

Table 4.12 Structure of Macy's Operating Outflow (unit: %)

	2013	2014	2015	2016	2017
Financing Amortization and Debt Premium	7.48%	38.46%	2.80%	2.77%	4.83%
Changes in Assets and Liabilities	92.52%	61.54%	97.20%	97.23%	95.17%

Figure 4.12 Structure of Macy's Operating Outflow

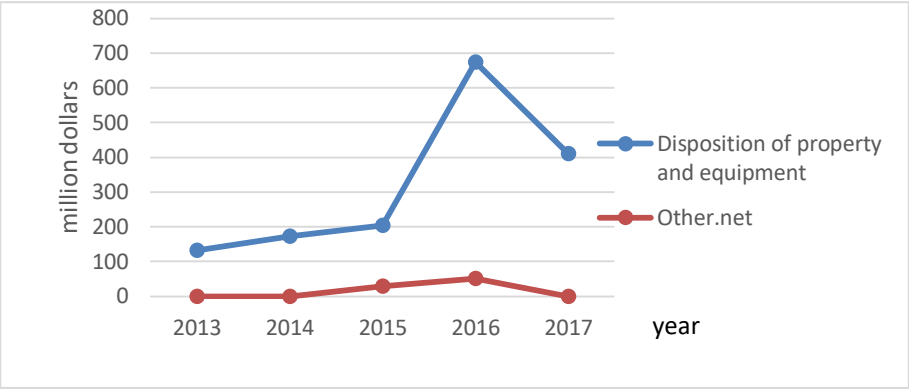


It's clear that the changes in assets and liabilities occupy the main role in Macy's operating outflow. Its percentage is more than 90% in general. After this, we can see the data of Macy's investing inflow from 2013 to 2017. (Table 4.13 and Figure 4.13)

Table 4.13 Evolution of Macy's Investing Inflow (unit: million dollars)

	2013	2014	2015	2016	2017
Disposition of Property and Equipment	132	172	204	673	411
Other. Net	0	0	29	52	0

Figure 4.13 Evolution of Macy's Investing Inflow

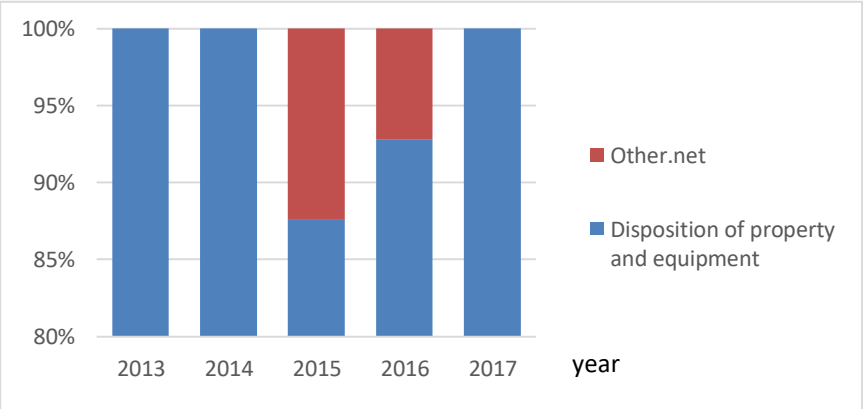


On the whole, investing inflow is on the rise. Among the two components of the inflow, dispositions' ranger is larger compared with the others. And during the year 2015 to 2017, disposition of property and equipment changed dramatically, which reveals that Macy's investing strategy may be not well arranged. And now come to the statistics of the proportions of Macy's investing inflow. (Table 4.14 and Figure 4.14)

Table 4.14 Structure of Macy's Investing Inflow

	2013	2014	2015	2016	2017
Disposition of Property and Equipment	100.00%	100.00%	87.55%	92.83%	100.00%
Other. Net	0.00%	0.00%	12.45%	7.17%	0.00%

Figure 4.14 Structure of Macy's Investing Inflow

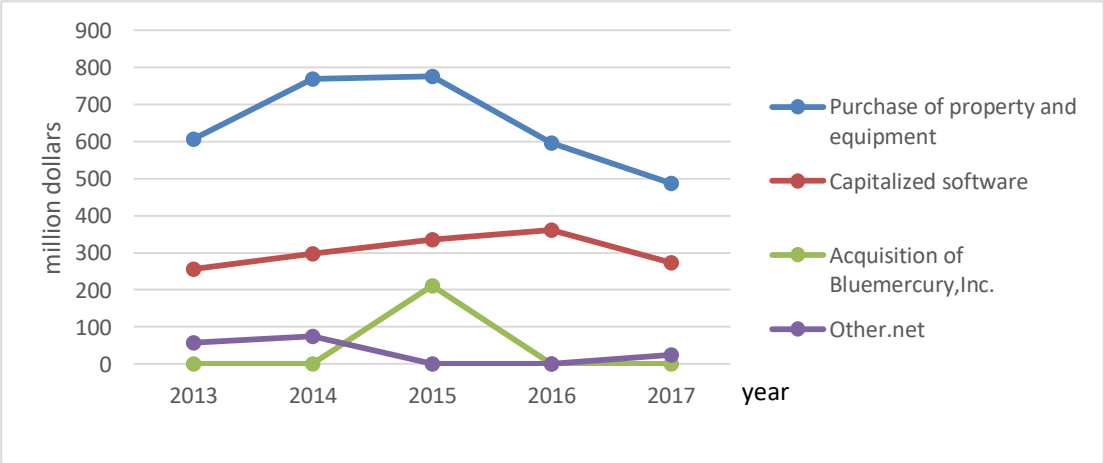


Obviously, disposition of property and equipment is the main income of Macy's investing activities. Except in 2015 and 2016, all investing outflow was from disposition of property and equipment. Next to it, the evolution of Macy's investing outflow is as follows. (Table 4.15 and Figure 4.15)

Table 4.15 Evolution of Macy's Investing Outflow (unit: million dollars)

	2013	2014	2015	2016	2017
Purchase of Property and Equipment	607	770	777	596	487
Capitalized Software	256	298	336	361	273
Acquisition of Blue Mercury, Inc.	0	0	212	0	0
Other. Net	57	74	0	0	24

Figure 4.15 Evolution of Macy's Investing Outflow

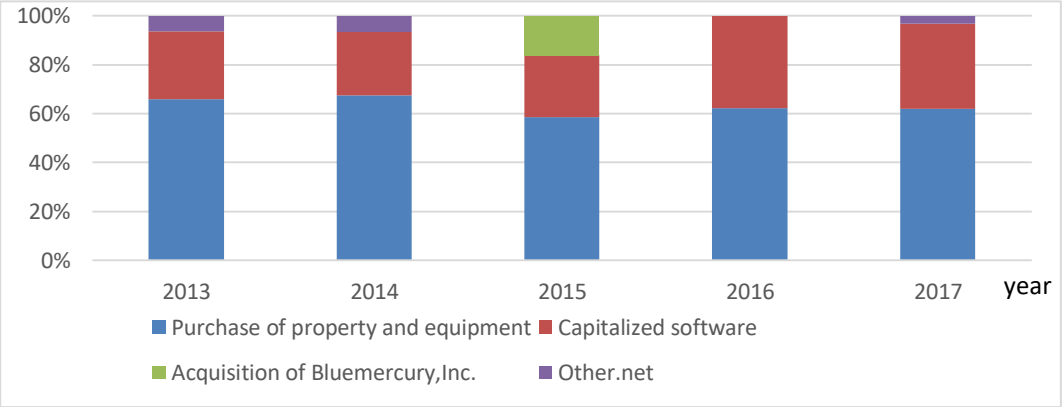


As the figure shows, purchase of property and equipment costs less and less during the last five years, which is good for it decreases the production coats of the company. Capitalized software is on the rise and decreased a little during 2016 to 2017. Investing more on the software technology will benefit a department store which mainly uses online selling channels. And in 2015, Macy's acquired the company Blue Mercury, Inc. And the next thing is each components of Macy's investing outflow from 2013 to 2017. (Table 4.16 and Figure 4.16)

Table 4.16 Structure of Macy's Investing Outflow (unit: %)

	2013	2014	2015	2016	2017
Purchase of Property and Equipment	70.34	72.10	69.81	62.28	64.08
Capitalized Software	29.66	27.90	30.19	37.72	35.92
Acquisition of Blue Mercury, Inc.	0.00	0.00	19.05	0.00	0.00
Other. Net	6.60	6.93	0.00	0.00	3.16

Figure 4.16 Structure of Macy's Investing Outflow

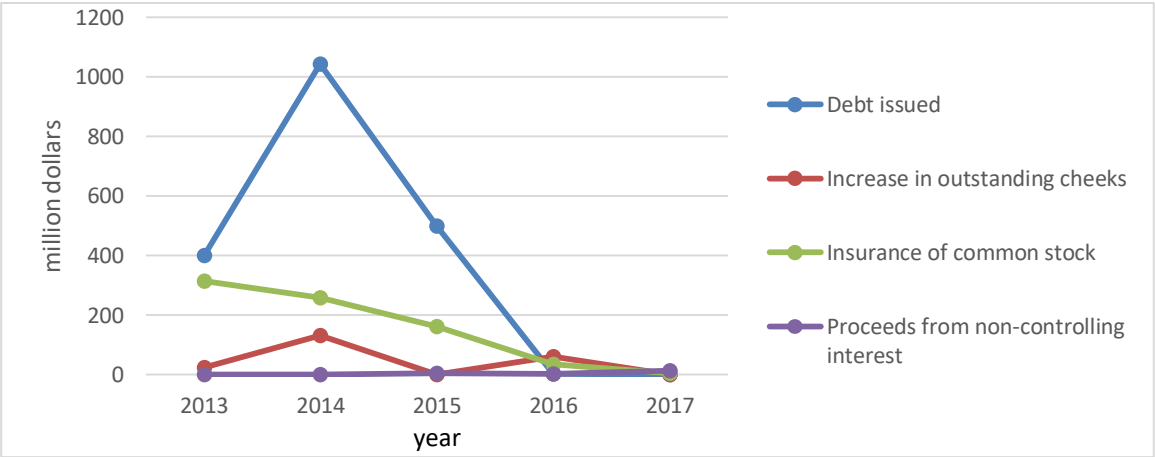


The main costs of Macy's investing outflow are property purchase and capitalized software. Over 50% of the investing outflow is used to purchase property and equipment. And about 30% is used to develop software. Then the statistics of finance inflow evolution follow. (Table 4.17 and Figure 4.17)

Table 4.17 Evolution of Macy's Finance Inflow (unit: million dollars)

	2013	2014	2015	2016	2017
Debt Issued	400	1044	499	2	0
Increase in Outstanding Cheeks	24	133	0	61	0
Insurance of Common Stock	315	258	163	36	6
Proceeds From Non-controlling Interest	0	0	5	4	13

Figure 4.17 Evolution of Macy's Finance Inflow

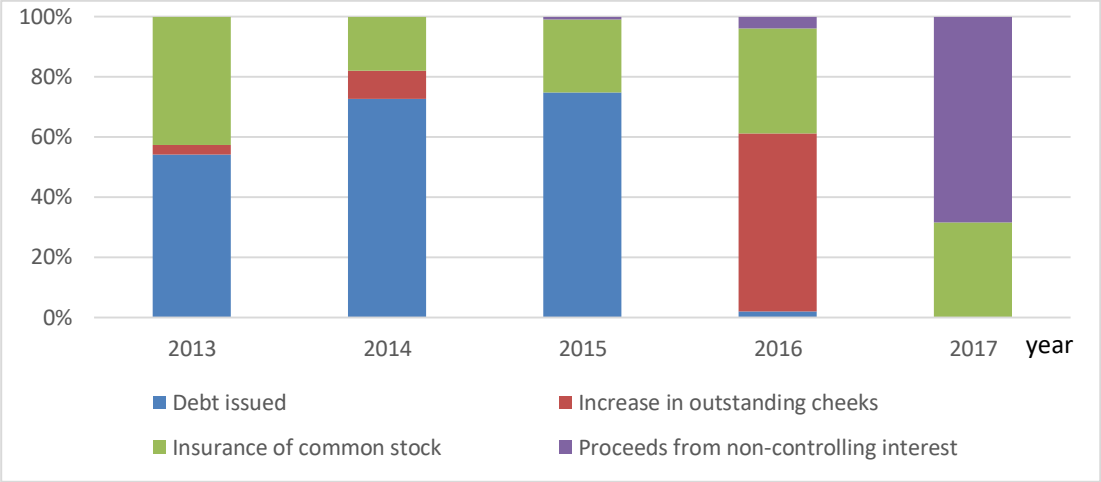


The inflow from debt issued has the biggest volatility. It increased greatly in 2013 and got the top in 2014, and then it dropped sharply. We can draw the conclusion that the company borrows less money, but the number of the issued securities is quite unstable. And the inflow from the insurance of common stock keeps decreasing year by year, which means the company gets less and less money from its financing. And next are the statistics showing every proportion of Macy's financing Inflow. (Table 4.18 and Figure 4.18)

Table 4.18 Structure of Macy's Finance Inflow

	2013	2014	2015	2016	2017
Debt Issued	54.13%	72.75%	74.81%	1.94%	0.00%
Increase in Outstanding Cheeks	3.25%	9.27%	0.00%	59.22%	0.00%
Insurance of Common Stock	42.63%	17.98%	24.44%	34.95%	31.58%
Proceeds From Non-controlling Interest	0.00%	0.00%	0.75%	3.88%	68.42%

Figure 4.18 Structure of Macy's Finance Inflow

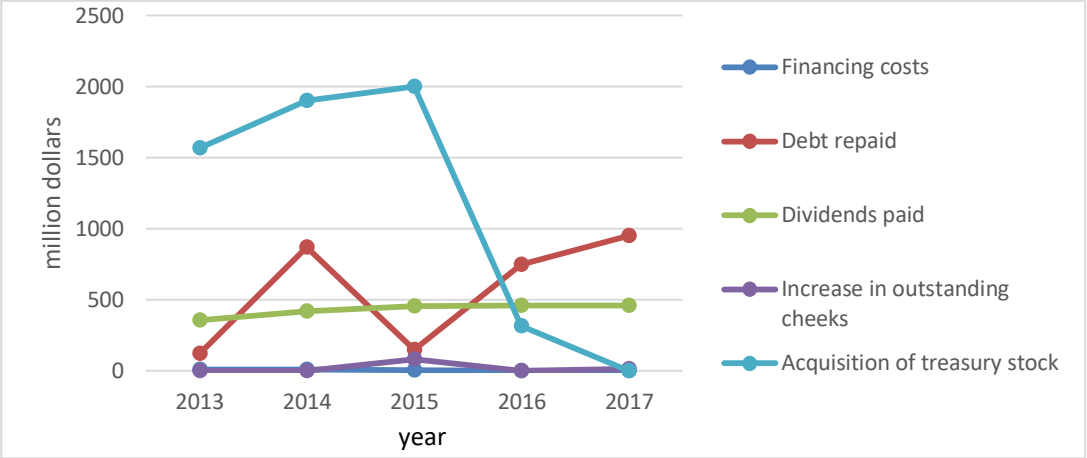


As we can see, during the year 2013 to 2015, Macy's got its majority financing income from the debt issued. But for 2016 and 2017, there were nearly no debt issued in Macy's financing structure. Instead, the company relied more on outstanding cheeks, insurance of common stock as well as non-controlling interests. Maybe the company changed its financing strategy from 2016. After the proportions of Macy's Finance Inflow, here are the statistics of the financing outflow evolution from 2013 to 2017. (Table 4.19 and Figure 4.19)

Table 4.19 Evolution of Macy's Finance Outflow (unit: million dollars)

	2013	2014	2015	2016	2017
Financing Costs	9	9	4	3	1
Debt Repaid	124	870	152	751	954
Dividends Paid	359	421	456	459	461
Increase in Outstanding Cheeks	0	0	83	0	15
Acquisition of Treasury Stock	1571	1901	2001	316	1

Figure 4.19 Evolution of Macy's Finance Outflow

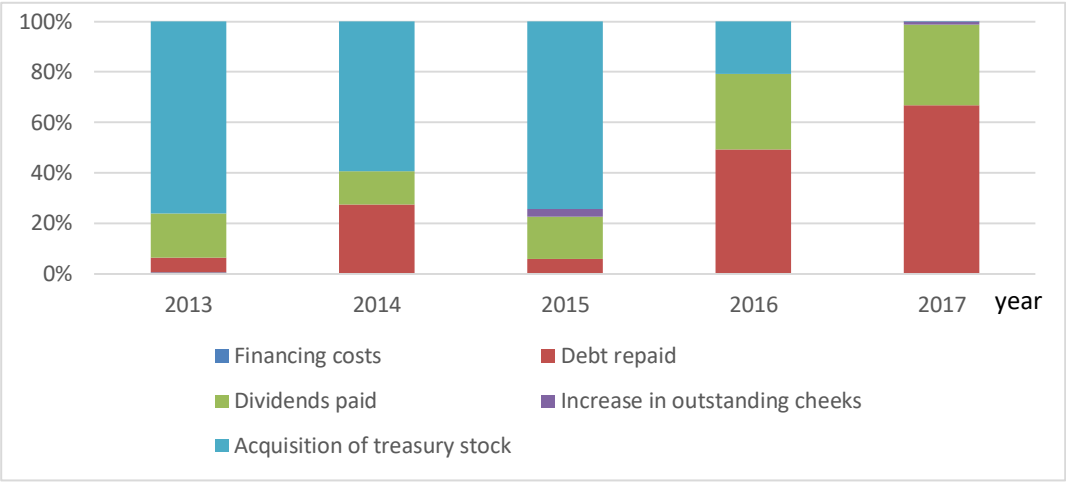


There are two components which are rather stable, dividends paid and financing costs. Dividends paid nearly doesn't fluctuate, on the whole, it's on the rise. It tells us that Macy's kept the dividend policy, which is stable and healthy. Moreover, its shareholders can receive more and more profits. And the financing costs of the company are always very low, which is also good. As for the outstanding cheeks, sometimes, it's the financing costs, such as in 2015 and 2017, and sometimes it brings the income. Acquisition of treasury stock and debt repaid has quite high volatility. From 2015 and 2016, acquisition of treasury stock experienced a sharp drop, which means the company brought much less treasury stocks. And finally we will see the statistics about the components of Macy's financing outflow. (Table 4.20 and Figure 4.20)

Table 4.20 Structure of Macy's Finance Outflow (unit: %)

	2013	2014	2015	2016	2017
Financing Costs	0.44	0.28	0.15	0.20	0.07
Debt Repaid	6.01	27.18	5.64	49.12	66.62
Dividends Paid	17.40	13.15	16.91	30.02	32.19
Increase in Outstanding Cheeks	0.00	0.00	3.08	0.00	1.05
Acquisition of Treasury Stock	76.15	59.39	74.22	20.67	0.07

Figure 4.20 Structure of Macy's Finance Outflow



In the past five years, the company had two types of financing outflow structure. From 2013 to 2015, the main outflow is acquisition of treasury stock, which takes about 60% of the total outflow. And the dividends paid and the debt repaid takes the second place. As for the year 2016 and 2017, about 50% of the total outflow was used for debt repaid. And the dividends paid increased a little.

4.2. Financial Ratios of Macy's

In this part of the chapter, several financial ratios of Macy's will be involved to explain and analyze the operating condition and profit ability of the company. There will be liquidity ratios, solvency ratios, profitability ratios as well as assets management ratios in this part.

4.2.1. Liquidity Ratios of Macy's

Firstly, we will focus on the liquidity ratios. Liquidity ratios measure company's ability to meet its short-term debts and obligations. And these ratios provide results by comparing the company's current assets and current liabilities. We are able to know how easily or how hard can the company meet its short-term obligations. Solvency ratios are similar, which are also called financial leverage ratios, show the company's ability to meet its long-term obligations. And they also show the proportions of a company's equity and liabilities. Profitability ratios tell us how profitable a company is and how efficiently a company uses its capital. Generally,

profitability ratios are quite significant. The more profitable, the more competitive a company is. Assets management ratios are about the company's activity turnovers. And these activities have a direct impact on the company's liquidity. Here are some important statistics from Macy's balance sheet for calculating the liquidity ratios. And the formulas of liquidity ratios are also there. (Table 4.21-4.23, Figure 4.21-4.22)

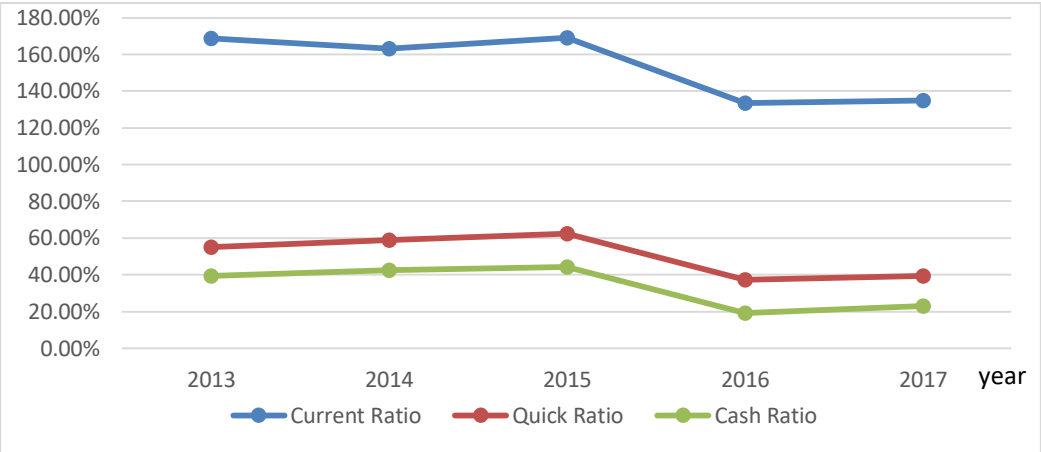
Table 4.21 Necessary Data for Macy's Liquidity Ratios (unit: million dollars)

	2013	2014	2015	2016	2017
Current Assets	7876	8688	8580	7652	7626
Current Liabilities	4668	5326	5075	5728	5647
Inventories	5308	5557	5417	5506	5399
Cash and Cash Equivalents	1836	2273	2246	1109	1297
Receivables	371	438	424	558	522
Operating Costs	25253	25278	25040	24463	23574
Interest	390	395	363	367	321
Tax	804	864	608	341	-29

Table 4.22 Liquidity Ratios of Macy's (unit: %)

	2013	2014	2015	2016	2017
Current Ratio	168.72	163.12	169.06	133.59	135.05
Quick Ratio	55.01	58.79	62.33	37.47	39.44
Cash Ratio	39.33	42.68	44.26	19.36	22.97

Figure 4.21 Liquidity Ratios of Macy's

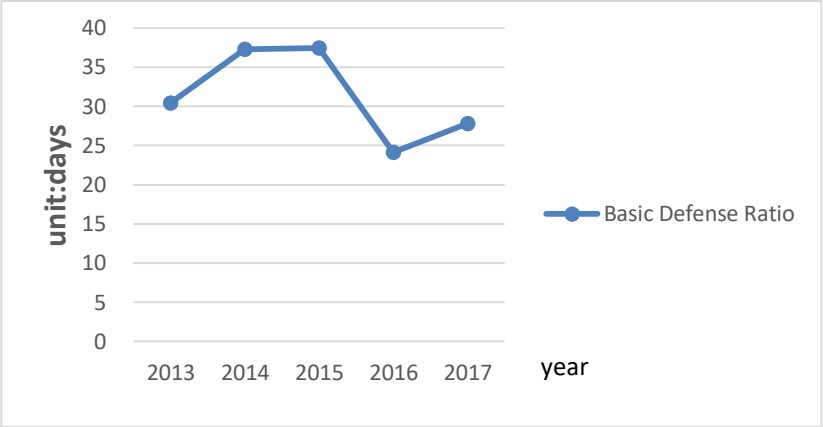


Firstly is the analysis of current ratio. Current ratio (formula 2.1) tells us how many short-term obligations can be paid by one unit of current assets. The current ratio of Macy's was always higher than 120% during the last five years. Hence, Macy's didn't face the problem for short-term debts at all. Then comes to the analysis of quick ratio, which is similar to the current ratio (formula 2.2). Quick ratio is more stringent than current ratio, because it takes the reality into account, which means that inventories should be deducted from the current assets as for the company gets no money before the inventories are sold. Naturally, quick ratio must be lower than current ratio. And from the figure, it's 40% to 60%. And the analysis of cash ratio is as follows (formula 2.3). Cash ratio is the situation in which we use cash for current liabilities, and it's the lowest in this figure. Finally there is a liquidity ratio with the different unit, basic defense ratio. Its unit is the day, and the higher the basic defense ratio, the higher the liquidity of the company.

Table 4.23 Basic Defense Ratio of Macy's (unit: days)

	2013	2014	2015	2016	2017
Basic Defense Ratio	30	37	37	24	28

Figure 4.22 Basic Defense Ratio of Macy's



As for the calculation method of this basic defense ratio, we have reference in chapter two (formula 2.4). And for explanation, defensive assets equal to cash plus receivables. This ratio tells how long the company can survive without touching its non-liquid assets or external financial resources. In the figure, basic defense ratio is between 24 days to 37 days, which is not so long. According to all information above, the company has little liquidity risk.

4.2.2. Solvency Ratios of Macy's

And after liquidity ratios, the solvency ratios of Macy's will also be calculated. The statistics and formulas are on the below. (Table 4.24-4.25, Figure 4.23)

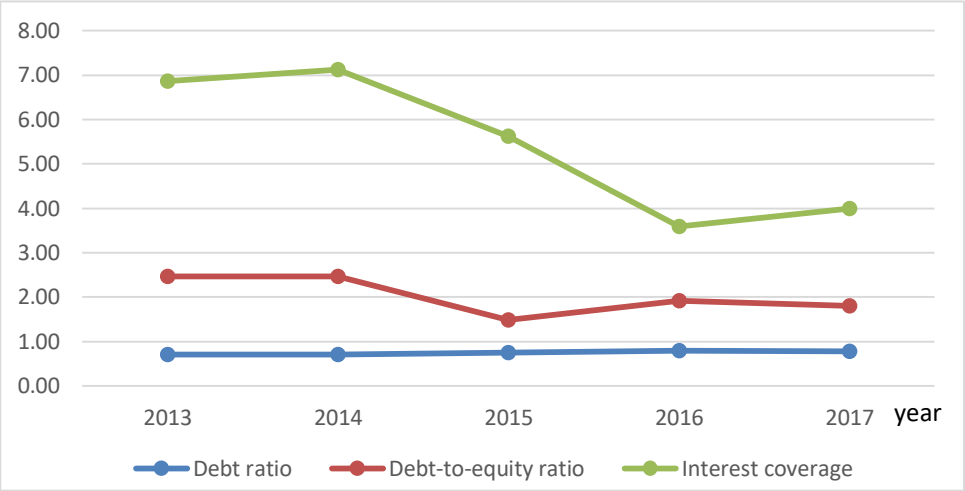
Table 4.24 Necessary Data for Macy's Solvency Ratios (unit: million dollars)

	2013	2014	2015	2016	2017
Total Debt	14940	15385	15952	16323	15529
Total Assets	20991	21634	21330	20576	19851
Equity	6051	6249	10756	8503	8645
EBIT	2680	2812	2041	1319	1284
Interest Paid	390	395	363	367	321

Table 4.25 Solvency Ratios of Macy's

	2013	2014	2015	2016	2017
Debt Ratio	0.71	0.71	0.75	0.79	0.78
Debt-to-equity Ratio	2.47	2.46	1.48	1.92	1.80
Interest Coverage	6.87	7.12	5.62	3.59	4.00

Figure 4.23 Solvency Ratios of Macy's



First and foremost, let's analyze the debt ratio (formula 2.5). We are able to know how the company's assets are financed, in other words, the proportion of the company's liabilities to its total assets. From the data, over 0.7 of the company's total assets are liabilities. Moreover, the debt ratio is always increasing, which means that Macy's is quite depended on debts. And then we have debt-to-equity ratio, which is similar to debt ratio (formula 2.6). Debt-to-equity ratio tells the relation between debts and equity. If debt-to-equity ratio is higher than 1, the company uses more debts than equity to finance the company's total assets. Obviously, in the figure the lowest debt-to-equity ratio is 1.48, and the highest is 2.46, which means the company's leverage is quite high.

As for interest coverage, it's the percentage between operating profits and interest paid, which tells that how many operating profits are used to pay the interest (formula 2.7). In 2013

and 2014, about 1/7 of the operating profits were for interest paid, and more than 1/5 in 2015, the lowest is about 1/3 in 2016, and 1/4 in 2017. We draw the conclusion that Macy's arrange more operating profits to pay interest in recent years.

4.2.3. Profitability Ratios of Macy's

Except solvency ratios, we get profitability ratios, too. And here is the necessary data from income statement as well as the formulas for calculating profitability ratios. As we all know, for a company the most important indicators may be its profitability ratios. And almost everyone judges a company according to its profitability ability. The following is the analysis of Macy's profitability performance during 2013 to 2017. (Table 4.26-4.27, Figure 4.24)

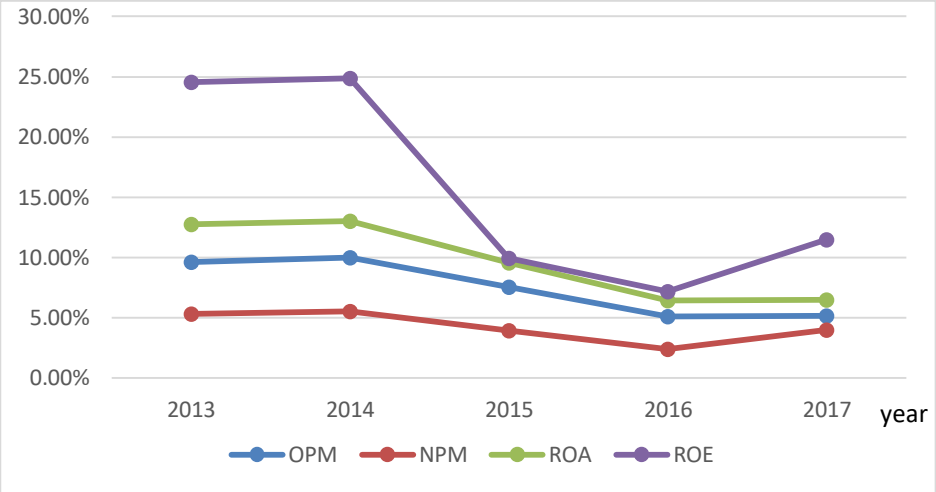
Table 4.26 Necessary Data for Profitability Ratios (unit: million dollars)

	2013	2014	2015	2016	2017
EBIT	2680	2812	2041	1319	1284
Revenues	27931	28105	27079	25778	24837
EAT	1486	1553	1070	611	992
Equity	6051	6249	10756	8503	8645
Assets	20991	21634	21330	20576	19851

Table 4.27 Profitability Ratios of Macy's (unit: %)

	2013	2014	2015	2016	2017
OPM	9.60	10.01	7.54	5.12	5.17
NPM	5.32	5.53	3.95	2.37	3.99
ROA	12.77	13.00	9.57	6.41	6.47
ROE	24.56	24.85	9.95	7.19	11.47

Figure 4.24 Profitability Ratios of Macy's



There are four indicators in the figure, operating profit margin, net profit margin, return on assets and return on equity. First of all, operating profit margin (formula 2.8) is an indicator which measures how much profit the company generates from one unit of sales. We are able to know the proportion of revenues which can be paid for interest. From the figure, operating profit margin is relatively stable, which means that investing in Macy's is relatively less risky. Then come to net profit margin (formula 2.9). It's the ratio of net profits to the company's sales, which tells us how much of each unit of sales becomes the company's profits. Obviously, NPM is lower than OPM. Net profit margin keeps on about 5%, and in 2017, there was a good increase of NPM.

As for return on assets (formula 2.10) and return on equity (formula 2.11), they tell us the company's efficiency at generating profits from the assets and equity. It's clear that these two indicators are more suitable to be compared with the data of the same company or the similar companies, and the higher the better, for the high ratio means the company collects higher profits. Both the ROA and ROE don't perform well in the figure. Basically, ROA always has the trend to decrease, and ROE is quite unstable and decreased more than increased. Totally, the profit condition of Macy's is not satisfying.

4.2.4. Assets management Ratios of Macy's

And finally for financing ratios we still have assets management ratios. The necessary statistics and the corresponding formulas are as follows. (Table 4.28-4.30, Figure 4.25-4.26)

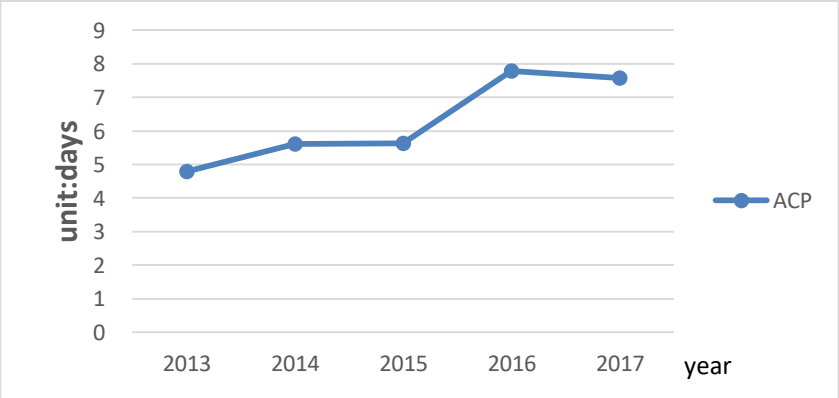
Table 4.28 Necessary Data for Macy's Assets Management Ratios (unit: million dollars)

	2013	2014	2015	2016	2017
Receivables	371	438	424	558	522
Revenues	27931	28105	27079	25778	24837
Total Assets	20991	21634	21330	20576	19851
Fixed Assets	13115	12946	12750	12924	12225
Inventories	5308	5557	5417	5506	5399

Table 4.29 Average Collection Period of Macy's (unit: days)

	2013	2014	2015	2016	2017
ACP	5	6	6	8	8

Figure 4.25 Average Collection Period of Macy's



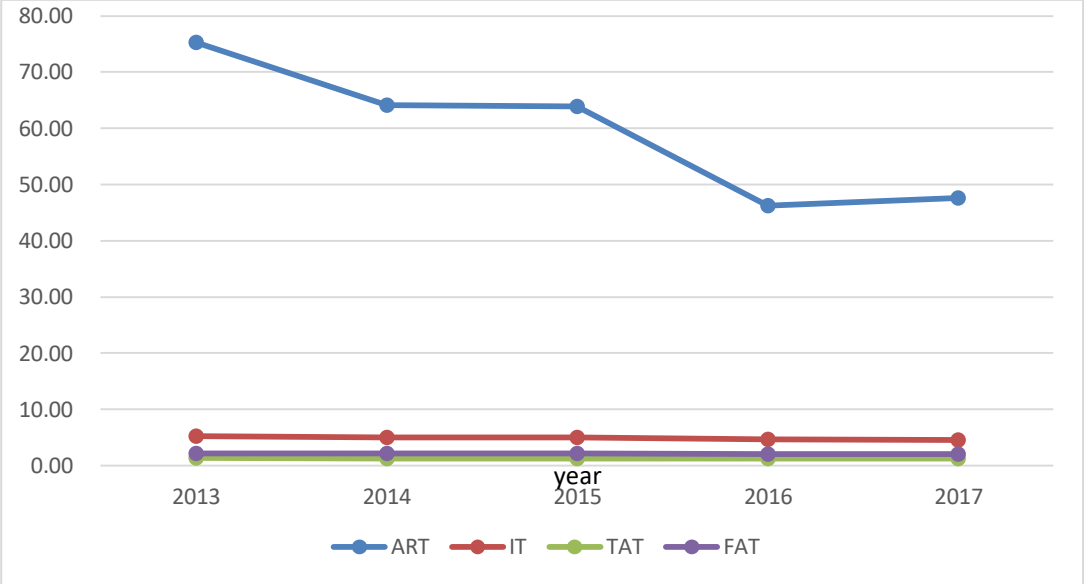
ACP (formula 2.12) tells us how well the company converts receivables into cash. That is, how many days on average it takes to collect the receivables. Macy's average collection

period is 5 to 8 days. Short ACP is quite helpful with the company's liquidity, but the ACP seems to be longer and longer.

Table 4.30 Assets Management Ratios of Macy's

	2013	2014	2015	2016	2017
ART	75.29	64.17	63.87	46.20	47.58
IT	5.26	5.06	5.00	4.68	4.60
TAT	1.33	1.30	1.27	1.25	1.25
FAT	2.13	2.17	2.12	1.99	2.03

Figure 4.26 Assets Management Ratios of Macy's



ART is accounts receivable turnover (formula 2.13). It's a ratio which tells that how many times a company collects its average accounts receivable during one year. In 2013, Macy's can roll over its receivables 75 times, which is nice. Because it means Macy's needs very short time to collect its credit sales. Later on the ART decreased, but the number was still high. And inventory turnover (formula 2.14) is the ratio measures the times inventory is sold or used during a year. It's about the operating efficiency. As for total assets turnover (formula

2.15), it measures how successfully the company generates revenues from the total assets. Macy's TAT didn't change a lot, but decreased slightly during the last five years. In 2013, Macy's TAT was 1.33. It means that for each dollar invested in total assets, the company gains 1.33 dollars as revenues. However, Macy's TAT decreased all the way and became 1.25 in 2017. And FAT (formula 2.16) is similar to TAT, which measures how many revenues the company gets from each unit of its fixed assets. According to our analysis, Macy's FAT is relatively stable. All in all, the assets management is safe and healthy in this company.

4.3. Pyramidal Decomposition of Macy's

In this part, there will be pyramidal decomposition applied. First and foremost, pyramidal decomposition is a reliable and precise method to analysis every composition ratio's impact on the target ratio. It enables us to understand the factors which are important to the target ratio. For instance, here I choose the DuPont analysis to explain. In this analysis, we try to find which factors drive the financial ratio, ROE (formula 2.17). And there are three composition ratios, EAT/ revenues, revenues/total assets, total assets/equity. We multiple all the composition ratios together and get the target ratio, ROE (formula 2.17).

By applying this method, we calculate the absolute changes of the component ratios and the target ratio. And then we use the method of gradual changes to find out how many changes are contributed by the first component ratio and how many changes are contributed by the rest ones. Finally we order these component ratios and know which component ratio is the significant one to our target ratio. Actually, there are several ways to conduct this analysis, and the method of gradual changes is used in this part (formula 2.18, 2.19, and 2.20).

And the followings are the calculation results, which are made to figure out how the compositions ratios influence Macy's ROE. Of course our results are also here. (Table 4.31-4.36, Figure 4.27)

Table 4.31Changes of Components and Macy's ROE from 2013-2017 (unit: million dollars except for the percentages)

	2013	2014	2015	2016	2017
ROE	24.46%	24.85%	9.95%	7.19%	11.47%
EAT	1486	1553	1070	611	992
Revenues	27931	28105	27079	25778	24837
Total Assets	20991	21634	21330	20576	19851
Equity	6051	6249	10756	8503	8645
Δ ROE(abs)		0.29%	-14.90%	-2.76%	4.29%

Table 4.32 How the Changes of Components Influence Macy's ROE (2013~2014)

	a2013	a2014	Δ a	Δ xa1/2/3	order
a1=EAT/Rev	5.320%	5.526%	0.205%	0.948%	1
a2=Rev/Assets	133.062%	129.911%	-3.151%	-0.604%	2
a3=Assets/Equity	346.901%	346.199%	-0.702%	-0.050%	3
Sum				0.29%	

Symbols: a=component ratio, Δ a=absolute change in the component ratio, $\Delta X a_1$=absolute change in the target ratio caused by the change in the first component ratio.

Table 4.33 How the Changes of Components Influence Macy's ROE (2014~2015)

	a2014	a2015	Δ a	Δ xa1/2/3	order
a1=EAT/Rev	5.526%	3.951%	-1.574%	-7.080%	2
a2=Rev/Assets	129.911%	126.953%	-2.959%	-0.405%	3
a3=Assets/Equity	346.199%	198.308%	-147.891%	-7.419%	1
Sum				-14.90%	

Table 4.34 How the Changes of Components Influence Macy's ROE (2015~2016)

	a2015	a2016	Δ a	Δ xa1/2/3	order
a1=EAT/Rev	3.951%	2.370%	-1.581%	-3.981%	1
a2=Rev/Assets	126.953%	125.282%	-1.671%	-0.079%	3
a3=Assets/Equity	198.308%	241.985%	43.677%	1.297%	2
Sum				-2.76%	

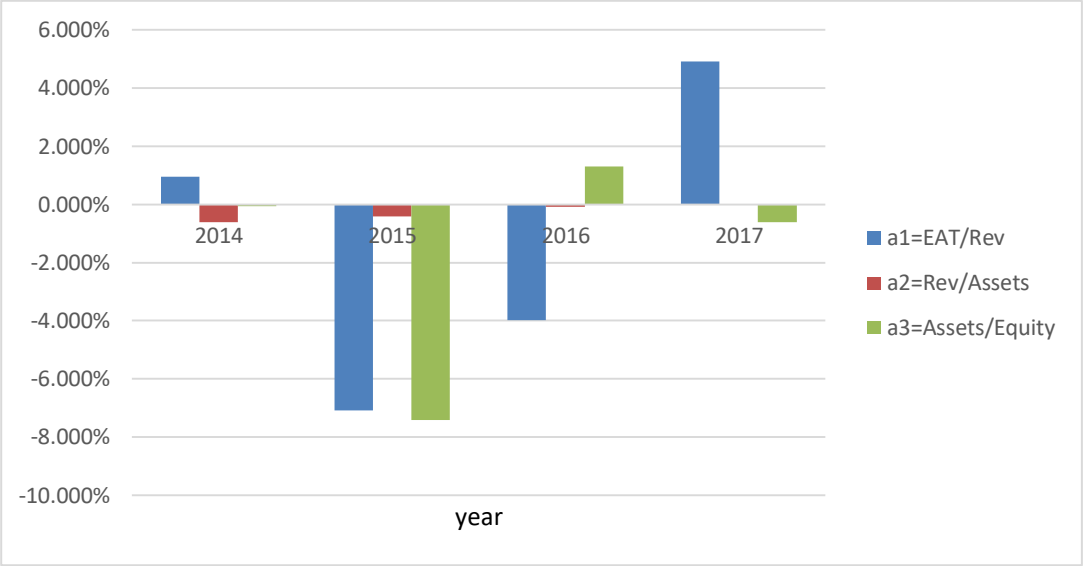
Table 4.35 How the Changes of Components Influence Macy's ROE (2016~2017)

	a2016	a2017	Δ a	Δ xa1/2/3	order
a1=EAT/Rev	2.370%	3.994%	1.624%	4.923%	1
a2=Rev/Assets	125.282%	125.117%	-0.165%	-0.016%	3
a3=Assets/Equity	241.985%	229.624%	-12.361%	-0.618%	2
Sum				4.29%	

Table 4.36 How the Changes of Components Influence Macy's ROE (2014~2017)

	2014	2015	2016	2017
a1=EAT/Rev	0.948%	-7.080%	-3.981%	4.923%
a2=Rev/Assets	-0.604%	-0.405%	-0.079%	-0.016%
a3=Assets/Equity	-0.050%	-7.419%	1.297%	-0.618%

Figure 4.27 How the Changes of Components Influence Macy's ROE (2014~2017)



As we know, EAT/Rev stands for net profit margin, Rev/total assets is assets turnover, and total assets/Equity equals to financial leverage. In 2014, net profit margin had the biggest impact on the ROE, 0.984%. And then is assets turnover and financial leverage. They all had negative influence. In 2015, all the components had negative impacts. Among them, financial leverage made the biggest impact, -7.419%. In 2016, the most important component was net profit margin again, which was -3.918%. In 2017, the biggest influence came from net profit margin, 4.923%, which was also the only positive component in this year.

It's natural that in different years every component ratios have different devotions to the ROE, and their influence can be either positive or negative. From the figure, however, the net profit margin seems to have the most significant influence.

4.4. Sensitivity Analysis

As the extension analysis of pyramidal decomposition, there will be sensitivity analysis in this part. It's generally used in financial models to find out how the target ratio is affected by the changes in another input variable. We are able to know the target ratio is more sensitive to which input variable. Moreover, the influences on the composition ratios are also available.

For the sensitivity analyses, we choose the data from 2016 to 2017 for calculation. We

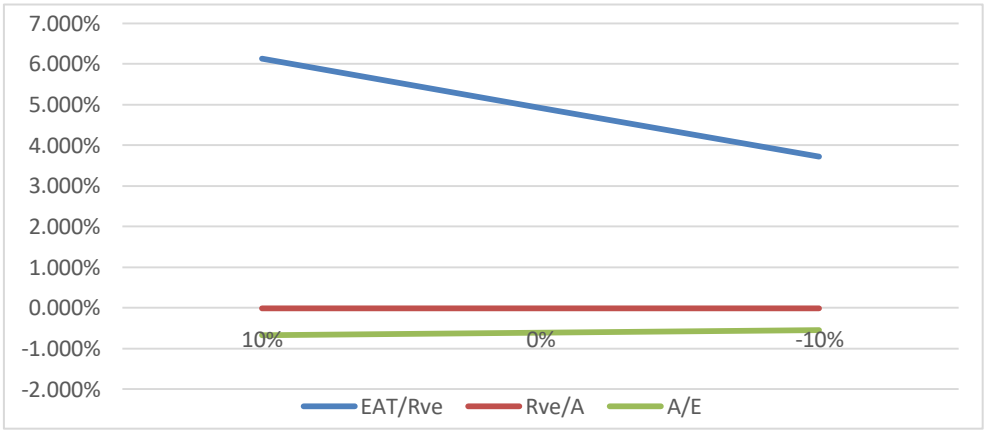
choose just one variable firstly, and calculate how other component ratios and target ratio change.

For example we figure out the changes of the other ratios if EAT increase or decrease by 10%. And next step, we compare the changing ranges of all the component ratios and the target ratio as well. Then we can conclude which ratio is the most sensitive one with the change of EAT. And next we restore the beginning value of EAT and apply the same method to other variables. We can see from the table 4. 37 that, if EAT increase by 10% net profit margin will increase by about 2%, assets turnover and financial leverage will decrease slightly, and ROE will increase by about 1%. That is to say net profit margin is the most sensitive one to the change of EAT, and it's also the most important one to the change of ROE. And all the necessary data and results are as follows. (Table 4.37-4.40, Figure 4.28-4.31)

Table 4.37 How Changes of EAT Influences Macy's ROE (2016-2017)

EAT Change	Value(EAT)	EAT/Rev Change	Rev/A Change	A/E Change	ROE Change
10%	1091.2	6.134%	-0.018%	-0.679%	5.44%
0	992	4.923%	-0.016%	-0.618%	4.29%
-10%	892.8	3.712%	-0.014%	-0.556%	3.14%

Figure 4.28 How Changes of EAT Influences Macy's ROE (2016-2017)

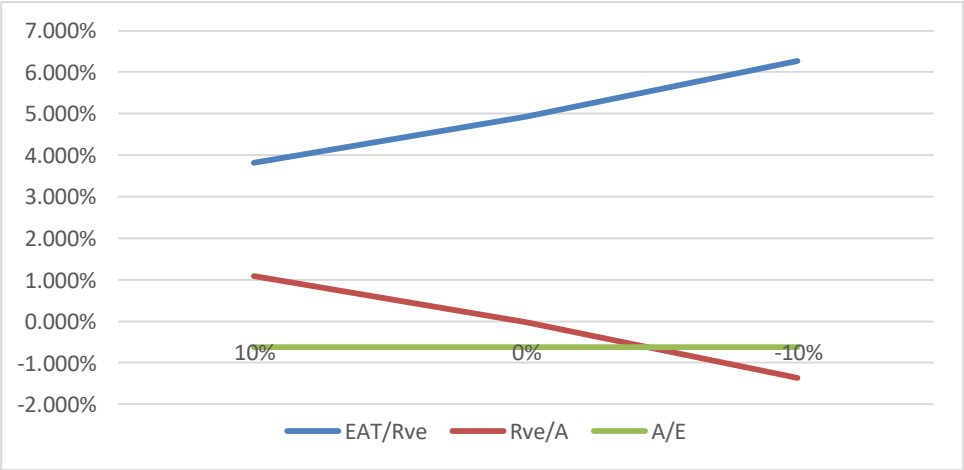


According to the analysis, net profit margin is the most sensitive to the change of EAT. Assets turnover and financial leverage have little reaction to the change of EAT. If EAT increase 10%, net profit margin increases from 4.923% to 6.134%, and ROE increases from 4.29% to 5.44%. EAT and net profit margin is positively related. And the change of ROE is almost from this component.

Table 4.38 How Changes of Revenues Influence Macy's ROE (2016-2017)

Rev. Change	Value(Rev.)	EAT/Rev Change	Rev/A Change	A/E Change	ROE Change
10%	27320.7	3.822%	1.085%	-0.618%	4.29%
0	24837	4.923%	-0.016%	-0.618%	4.29%
-10%	22353.3	6.268%	-1.361%	-0.618%	4.29%

Figure 4.29 How Changes of Revenues Influence Macy's ROE (2016-2017)

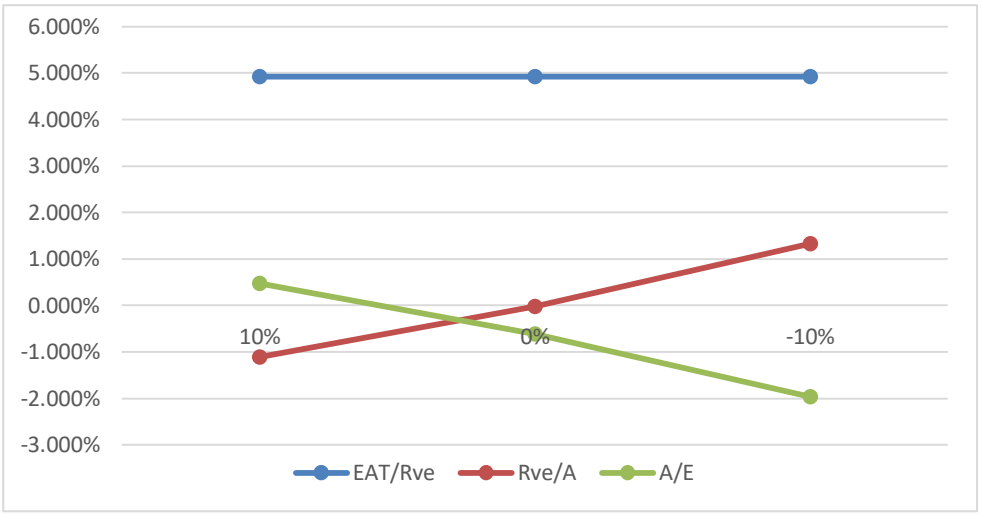


It's clear that net profit margin is the most sensitive to the change of revenues, and the assets turnover is the second. Both of them are sensitive to the change of revenues. However, financial leverage has nothing to do with revenues. And ROE doesn't change related to revenues, either. If revenues increase by 10%, net profit margin decreases from 4.923% to 3.822%, they are negatively related. If revenues increase by 10%, assets turnover increases from -0.016% to 1.085%, they have positive relation.

Table 4.39 How Changes of Assets Influence Macy's ROE (2016-2017)

A. Change	Value (A.)	EAT/Rev Change	Rev/A Change	A/E Change	ROE Change
10%	21836.1	4.923%	-1.115%	0.482%	4.29%
0	19851	4.923%	-0.016%	-0.618%	4.29%
-10%	17865.9	4.923%	1.328%	-1.961%	4.29%

Figure 4.30 How Changes of Assets Influence Macy's ROE (2016-2017)

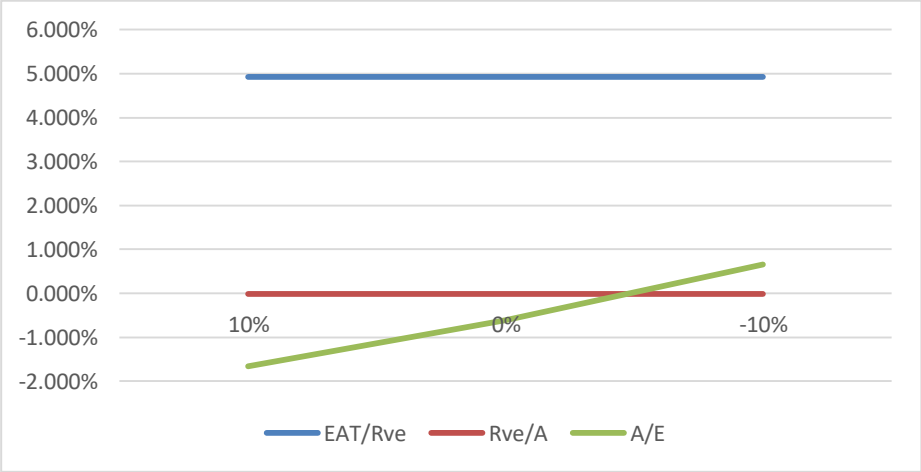


As we can see, net profit margin has no relationship with the change of assets. Moreover, the changes of assets won't influence the value of ROE, either. Assets turnover and financial leverage are sensitive to the change of assets. If assets increase by 10%, assets turnover will decrease from -0.016% to -1.115%, and financial leverage will increase from -0.618% to 0.482%.

Table 4.40 How Changes of Equity Influences Macy's ROE (2016-2017)

E. Change	Value (E.)	EAT/Rev Change	Rev/A Change	A/E Change	ROE Change
10%	9509.5	4.923%	-0.016%	-1.661%	3.25%
0	8645	4.923%	-0.016%	-0.618%	4.29%
-10%	7780.5	4.923%	-0.016%	0.657%	5.56%

Figure 4.31 How Changes of Equity Influences Macy's ROE (2016-2017)



We can see from the table that net profit margin and assets turnover are not related to the equity, the changes of equity will only influence financial leverage. The equity has negative influence on financial leverage and ROE. If the equity increase by 10%, the financial leverage will decrease from -0.618% to -1.661%. And ROE will decrease from 4.29% to 3.25%.

5. Conclusion

The aim of this thesis is to know about Macy's financial performance in the market and make some reasonable predictions of its future development. We get to know its ability to gain profits from the financial analysis and we can also know the predictions of the company from its growing trends.

Chapter one introduces the structures of the thesis, which help us to get the points more precisely. And we can also pay more attention to the key parts.

And chapter two is the theoretical part, which concludes some methods and financial ratios. I learned from it that for common size analysis, we use vertical and horizontal analysis. For solvency analysis, profitability analysis, liquidity analysis and assets management analysis, we have formulas. If we want to know which ratios are more powerful in driving the target ratios, we use pyramidal decomposition to calculate. And we also have sensitivity analysis, which is able to see the changes of the ratios if the variables increase or decrease.

From chapter three we can see the history of Macy's. It was born quite early and it survived several financial crises. And it has several leaders, too. There is much information in this chapter, the main business of Macy's, the marketing strategy of it as well as how they undertake the social responsibilities. As a department store, Macy's can have customers from every class of the society. And it found out the main customers, the middle class women. For marketing, Macy's pay much attention to its services in order to attract more customers. And this company also cares about its social responsibilities. Macy's chose the environmental friendly way, it gives back to support the communities. These behavior gained good reputation for it.

Then comes to the chapter four, in which we analyzed the common size of Macy's, and we also calculated a lot of ratios to observe the company's ability to gain profits, fulfill its obligations as well as its efficiency to operate the whole company. In order to see the situation more precisely, plenty of tables and figures are showed in chapter four. We can see from this

chapter that the assets and liabilities of Macy's didn't fluctuate a lot. And the shareholder's equity has an obvious tend to increase, which is good for the investors. In the income statement, the net sales decreased from the year 2014. Meanwhile, the operating costs also decreased. But the operating income decreased a lot from 2014, which is a negative aspect. However, Macy's also used much more less money for investing except the year 2014 and 2015. And compared with the investing activities, what are used by Macy's financing activities kept stable on the whole. Only the in 2014 and 2015 the situation seemed to be special. In 2013 and 2014 Macy's had the biggest amount of cash and cash equivalents, but in 2015 the cash seriously dropped to negative and after that the amount of money kept small.

As for the liquidity ratios, Macy's has little risk for its short-term obligations. And except the drop during 2015 and 2016, Macy's liquidity ratios are basically stable. For solvency ratios, it's obvious that Macy's depends a lot on the debts. But the amount of debts changes a little ever year and the debts have a decrease. And the company attaches importance to the interest for the investors. Even adjusted by the company, the interest coverage is still high. The profitability ratios all decreased during 2014 to 2016, but they quickly recovered and increased from 2016 to 2017. As for the assets management ratios, we know from the data that the efficiency is on the general standard and totally the results are stable.

We know from the pyramidal decomposition that ever year each component had different impact on Macy's ROE. But the most significant components are net profit margin and the financial leverage.

For sensitivity analysis, the ROE is more sensitive to the changes of EAT and equity. If the EAT changes, the net profit margin changes the most. If the equity changes the financial leverage changes the most. But the changes of revenues and assets won't have any influence on the ROE.

Considering all above, Macy's has a stable situation and a preferred strategy to the shareholders. So investing on the company is safe. However its profit ability is not strong recently. The investors won't receive high profits, unless the holding is long enough.

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List of Abbreviations

A	assets
ACP	average collection period
ART	accounts receivable turnover
E	equity
EBIT	earnings before interests and tax
EAT	earnings after tax
FAT	fixed assets turnover
IT	inventory turnover
NPM	net profit margin
OPM	operating profit margin
ROA	return on assets
ROE	return on equity
Rev	revenues
TAT	total assets turnover

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Yuchun Zhao 周钰春

Student's name and surname

List of Annexes

Annexes

Annex1. Balance sheet of Macy's (unit: million dollars)

	2013	2014	2015	2016	2017
ASSETS					
Cash and cash equivalents	1836	2273	2246	1109	1297
Receivables	371	438	424	558	522
Merchandise inventories	5308	5557	5417	5506	5399
Prepaid expenses and other current assets	361	420	493	479	408
Total current assets	7876	8688	8580	7652	7626
Property and equipment-net	8196	7930	7800	7616	7017
Goodwill	3743	3743	3743	3897	3897
Other intangible assets-net	561	527	496	514	498
Other assets	615	746	711	897	813
Total noncurrent assets	13115	12946	12750	12924	12225
Total assets	20991	21634	21330	20576	19851
LIABILITIES AND SHAREHOLDERS' EQUITY					
Short-term debt	124	463	76	642	309
Merchandise accounts payable	1579	1691	1594	1526	1423
Accounts payable and accrued liabilities	2610	2810	3109	3333	3563
Income taxes	355	362	296	227	352
Total current liabilities	4668	5326	5075	5728	5647
Long-term debt	6806	6728	7233	6995	6562
Deferred income taxes	1645	1673	1443	1477	1443
Other liabilities	1821	1658	2201	2123	1877
Total noncurrent liabilities	10272	10059	10877	10595	9882
Shareholder's equity					
Common stock	4	4	4	3	3
Additional paid-in capital	3872	2522	1048	621	617
Accumulated equity	5108	6235	7340	6334	6088
Treasury stock	-2002	-1847	-1942	-1665	-1489
Accumulated other comprehensive loss	-931	-665	-1072	-1043	-896
Total Macy's, Inc. shareholder's equity	0	0	5378	4250	4323
Noncontrolling interest	0	0	0	3	-1
Total shareholder's equity	6051	6249	10756	8503	8645
Total liabilities and shareholders' equity	20991	21634	26708	24826	24174

Annex2. Income statement of Macy's (unit: million dollars, expect per share data)

	2013	2014	2015	2016	2017
Net sales	27931	28105	27079	25778	24837
Cost of sales	-16725	-16836	-16496	-15621	-15152
Gross margine	11206	11242	10583	10157	9685
Selling, general and administrative expenses	-8440	-8355	-8256	-8265	-8131
Impairments, store closing and other costs	-88	-87	-288	-479	-186
Settlement charges	0	0	0	-98	-105
Operating costs	-25253	-25278	-25040	-24463	-23574
Operating income	2678	2827	2039	1315	1263
Interest expense	-390	-395	-363	-367	-321
Premium on early retirement of debt	0	-17	0	0	10
Interset income	2	2	2	4	11
Income before income taxes	2290	2417	1678	952	963
Federal, state and local income tax expense	-804	-864	-608	-341	29
Net income	1486	1553	1070	611	992
Net loss attributable to noncontrolling interest	0	0	2	8	11
Net income attributable to Macy's, Inc. shareholders	1486	1553	1072	619	1003
Basic earnings per share attibutable to Macy's, Inc. shareholders	3.93	4.3	3.26	2.01	5.07
Diluted earnings per share attributable to Macy's, Inc. shareholders	3.86	4.22	3.22	1.99	5.04

Annex3. Cash flow statement of Macy's (unit: million dollars)

	2013	2014	2015	2016	2017
Cash flows from operating activities					
Net income	1486	1553	1070	611	992
Adjustments to reconcile net income to net cash provided by operating activities					
Impairments,store closing and other costs	88	87	288	479	186
Depreciation and amortization	1020	1036	1061	1058	991
Settlement charges	0	0	0	98	105
Stock-based compensation expense	62	73	65	61	58
Amortization of financing costs and premium on acquired debt	-8	-5	-14	-14	-45
Changes in assets and liabilities					
Decrease in receivables	-58	22	-45	-1	120
Decrease in merchandise inventories	-249	44	-60	107	221
Increase in prepaid expenses and other current assets	-2	-3	0	-8	-14
Increase in other assets not separately identified	-1	-61	-1	0	-772
Increase in merchandise accounts payable	101	-21	-78	-132	162
Increase in accounts payable,accrued liabilities and other items not separately identified	48	37	-144	-371	-179
Increase in current income taxes	7	-65	-69	125	114
Increase in deferred income taxes	-142	29	-1	-139	-412
Increase in other liabilities not separately identified	197	10	-88	-73	-127
Changes in assets and liabilities	-99	-8	-486	-492	-887
Net cash provided by operating activities	2549	2736	1984	1801	1400
Cash flows from investing activities					
Purchase of property and equipment	-607	-770	-777	-596	-487
Capitalized software	-256	-298	-336	-361	-273
Acquisition of Bluemercury,Inc.net of cash acquired	0	0	-212	0	0
Disposition of property and equipment	132	172	204	673	411
Other.net	-57	-74	29	52	-24
Net cash used by investing activities	-788	-970	-1092	-232	-373
Cash flows from financing activities					
Debt issued	400	1044	499	2	0
Financing costs	-9	-9	-4	-3	-1
Debt repaid	-124	-870	-152	-751	-954
Dividends paid	-359	-421	-456	-459	-461
Increase in outstanding cheeks	24	133	-83	61	-15
Acquisition of treasury stock	-1571	-1901	-2001	-316	-1
Insurance of common stock	315	258	163	36	6
Proceeds from noncontrolling interest	0	0	5	4	13
Net cash used by financing activities	-1324	-1766	-2029	-1426	-1413
Net increase in cash and cash equivalents	437	-27	-1137	188	158
Cash and cash equivalents beginning of period	1836	2273	2246	1109	1297
Cash and cash equivalents end of period	2710	2246	-28	1440	1069
Supplemental cash flow information					
Interest paid	388	413	383	396	361
Interest received	2	2	2	4	12
Income taxes paid(net of refunds received)	835	834	635	352	496